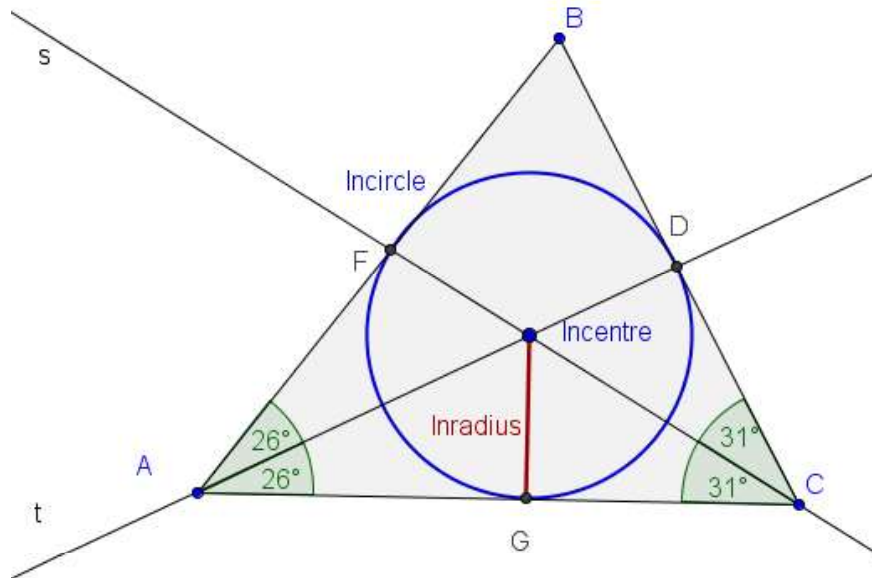# Student Activity Construction 17

Use in connection with interactive file "Constr 17" on the Student's CD.

> Construction 17: To construct an Incentre and incircle of a given triangle, using only straight edge and compass.

1. What is the value of the angle CAD?

_____

_____

2. What is the value of the angle DAB?

_____

_____

3. What is the relationship between the line d and the angle CAB?

_____

_____

4. What is the value of the angle ABE?

_____

_____

5. What is the value of the angle EBC?

_____

_____

6. What is the relationship between the line b and the angle ABC?

_____

_____

7. What is the value of the angle BCF?

_____

_____

8. What is the value of the angle FCA?

_____

_____

9. What is the relationship between the line h and the angle BCA?

_____

_____

10. At what point do the three angle bisectors of the angles meet?

_____

_____

11. What is the relationship between the line segment called the inradius and the line segment AC?

_____

_____

12. What do you notice about the incircle, no matter where we move the points A, B or C on the interactive file?

_____

_____

13. Describe how to draw the incentre of a triangle.

_____

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_____

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_____

14. A gardener wants to install a circular pond in their triangular garden. Using geometry how could they find the centre of the pond?

_____

15. Draw 2 triangles on a sheet of paper and find their incentre, incircle and inradius.